

Application No.: 09/704093

Docket No.: SMQ-039RCE/P5130

REMARKS

Claims 1-15 which were previously withdrawn in response to the Examiner's restriction requirement have now been cancelled as required by the Examiner. Applicants reserve the right to pursue the claims in a separate application. Claim 16 has been amended. Claims 16-17, 19-21, 24-33 and 36 are pending.

Rejections Pursuant to 35 U.S.C. 103(a)

Claims 16-17, 19-21, 24-33 and 36 were rejected as being unpatentable over Stuenkel et al (United States Patent No. 6,505,100, hereafter "Stuenkel et al") in view of Davidson et al (United States Patent No. 6,246,693, hereafter "Davidson et al"), in further view of Ishibashi et al (United States Patent No. 6,360,152, hereafter "Ishibashi"). For the reasons set forth below, those rejections are respectfully traversed.

Summary of Claimed Invention

The claimed invention addresses the display limitations encountered by display devices attempting to display messages received from multiple network devices in a motor vehicle. The claimed invention enables a display device to prioritize the messages received from multiple network devices, allows the display device to communicate with the network devices over a network. Each network device is registered and a priority message queue for the registered device is created on the display device. Each priority message queue is assigned a priority by the display apparatus based on the identity of the network device. All messages received from a network device are placed in the priority message queue associated with the network device. Each message is further sorted within the priority message queue based on a priority level encoded in the message by the sending device and identified by the display device. Messages are displayed based first on the priority between the respective message queues and then by priority within the message queue. The claimed invention also provides two-way

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communication between the network device and the display device that enables the retrieval of message status information by the network device.

Summary of Claim Amendments

Claim 16 has been amended to make clarify that the display manager is communicating bi-directionally with the network devices.

Summary of Stuempfle et al

Stuempfle et al discusses an information processing and vehicle control system taking place in a distributed network. The information processing system includes a display. The display may be used to display data from other network components. The network components may register with a shared memory address. As noted by the Examiner, Stuempfle et al does not discuss the prioritizing of messages or the use of a priority message queue.

Summary of Davidson et al

Davidson et al discusses a simplex (one-way) communication system between a user and a host computer utilizing at least one repeater device. The system is directed towards a one way packet communication channel with re-transmissions to ensure that data sent in the simplex communication system arrives at its destination. Davidson et al discusses the retransmission of a received message at pre-determined intervals in a one way communication system where other techniques such as time-division multiplexing are unavailable. Davidson et al does discuss the use of a priority queue for sorting messages based on a priority assigned by the originator of the message and identified by the repeater (see col. 16, lines 45-57). Messages assigned to the priority queue are handled on a FIFO (First In First Out) basis (see Col. 16, lines 52-53 and col. 18, lines 47-50) at the repeater. Davidson et al does not discuss creation of priority message queues based on the identity of the network device or the use of a priority message queue by a display device.

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Summary of Ishibashi et al

Ishibashi describes a vehicle control communication system used to connect different vehicle operating nodes to each other. For example, different nodes exist for engine control, automatic control, throttle control, anti-lock brake system control, traction system control etc. A scheduler node includes a communication processing section which facilitates communication among the various nodes in the motor vehicle. The communication processing section manages requests to transmit by referring to a node construction table and transmission control table. The node construction table assigns priorities to messages received from different nodes. The node construction table also includes the necessary bandwidth for time division transmissions. The transmission control table identifies the node, includes the transmission cycle allocated to each node for its required bandwidth, the transmission history of the node, and the node status. Ishibashi does not discuss the use of a display manager or a priority message queue on a display device.

Argument

Applicant respectfully suggests that the combination of references submitted by the Examiner fails to teach or suggest all of the elements of Applicant's independent claim 16 and the claims dependent thereon. Additionally, the combination of references suggested by the Examiner contains matter which affirmatively teaches away from the combination suggested by the Examiner. Each of these arguments is discussed below.

The claimed display device apparatus as set forth in independent claim 16 includes a display manager for determining what messages are displayed on the display surface. The display manager prioritizes the received messages to determine the sequence in which they are displayed. Claim 16 includes "a separate priority message queue created on said display device for each network device registered with the display device, each priority message queue having a priority level assigned to it based on the identity of the registered network device..." The Davidson reference discusses a queue (not a priority message queue) on a repeater used during the transmission process, not the display manager for the apparatus to which the messages

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were transmitted. The combination of references fails to teach or suggest the use of a priority message queue on the display device.

Of the Examiner's references, only Stuempfle has a display manager and Stuempfle does not discuss the prioritizing of messages or the use of a priority message queue with priorities based on device identity that is located on the display device. Davidson is a simplex system for retransmitting messages and discusses the prioritizing of messages on a repeater prior to retransmission. As admitted by the Examiner, Davidson does not discuss a separate priority message queue for each device. Ishibashi is a communication system for different nodes in a motor vehicle. There is no discussion of a display device or a display device with a priority message queue. The section cited by the Examiner discusses intra-node communications, not ones directed a display device. None of the three references shows the use of a priority message queue on a display device as claimed by Applicant. The combination of references has various pieces of Applicant's invention but fails to teach or suggest the claimed apparatus in its entirety. Accordingly, Applicant asserts that since all of the claims are dependent upon claim 16, and since the combination of references fails to teach or suggest all of the claim elements of claim 16, all of the claims are in order for allowance.

The suggested combination of references would not have been obvious at the time of the invention because there would be no motivation to combine the references. The Davidson reference teaches away from a combination with Ishibashi. Davidson is a communication system attempting to avoid collisions in a simplex (one way) communication system where time division multiplexing is unavailable (see col. 1, line 26-65 of Davidson). Ishibashi is a time division based communication system. The discussion of Figures 5 and 6 in Ishibashi located at col. 12 lines 4-43 generally and lines 19-20 particularly, discusses the required bandwidth for I/O processing. A practitioner skilled in the art would not find it obvious to combine the system of Davidson designed to make up for the inability to perform TDM (time division multiplexing) with a TDM-based system such as discussed in Ishibashi. TDM requires synchronization in message transmission and an acknowledgement as to message status. The system of Davidson is designed to make up for a lack of synchronization in a unidirectional system where an acknowledgement as to the status of the transmission is not available. The combination of

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elements from the one system with the other simply would not have been obvious to one skilled in the art.

Additionally, as discussed previously, motivation is also lacking to combine Stuempfle and Davidson since Davidson is a simplex system and the set of concerns involved in the transmission of data (e.g. message collisions) are significantly different between simplex and duplex systems. Applicant has now amended independent claim 16 to explicitly claim a bi-directional communication process between the display manager and the network devices. Accordingly, even if the combination of references cited by the Examiner taught or suggested all of the elements of Applicant's claims (a proposition Applicant strongly rejects as the combination fails to disclose Applicant's invention), there would have been no motivation to combine the references in a manner covering Applicant's claims. Stuempfle et al does not discuss priority message queues. Stuempfle et al does not contain motivation suggesting its combination with a elements of the simplex communication system using a priority messaging queue as an intermediate step in transmitting messages. There is/was no reason for those reasonably skilled in the art to have suggested the combination of references as obvious at the time of Applicant's invention.

Since all of Applicant's dependent claims are dependent on claims 16, and since the motivation to combine references in the combination suggested by the Examiner is lacking, Applicant respectfully requests the allowance of all claims.

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Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes a two month extension fee in the amount of \$430.00 is due in connection with this response. Please charge our Deposit Account No. 12-0080, under Order No. SMQ-039RCE from which the undersigned is authorized to draw.

Dated: October 26, 2004

Respectfully submitted,

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